Intraoperative neurophysiological monitoring (IONM), also referred to as intraoperative neuromonitoring, involves the use of electrophysiological methods such as electroencephalography (EEG) and electromyography (EMG) to monitor the functional integrity of certain neural structures during surgery.

IONM enables physicians to reduce the risk of iatrogenic damage to the nervous system, and the procedure can also provide functional guidance to the surgeon and anesthesiologist.

Because IONM continuously tracks neurophysiologic signals during surgery, risk of postoperative neurological deficit—such as weakness, loss of sensation, hearing loss, or impairment of other bodily functions—is reduced, according to the American Society of Neurophysiological Monitoring (ASNM).

IONM is normally performed by a neurologist or by technologists supervised by a physiologist. The supervising physiologist makes interpretations of recorded potentials and provides information to the surgeon. Members of an IONM team also can include technologists and monitoring personnel, anesthesiologists, and nurses, ASNM states. For more information, see the following Clinical Privilege White Papers:

- Practice area 144 – Neurology
- Practice area 155 – Neurological surgery (neurosurgery)

Involved specialties

Neurologists, neurosurgeons, anesthesiologists, physiatrists, family medicine physicians.

Positions of specialty boards

**ABA**

The American Board of Anesthesiology (ABA) lists educational and fellowship requirements for anesthesiologists. For continuum of education in anesthesiology, the ABA requires four years of full-time training to the date the medical or
osteoanatomic degree has been conferred, a clinical base year, and 36 months of approved training in anesthesia.

The clinical base year must include:
• At least six months of clinical rotations where the resident diagnoses and treats patients with a variety of medical and surgical problems. A maximum of one month may involve the administration of anesthesia and one month of pain medicine.
• Clinical base experiences such as training in internal medicine, pediatrics, surgery, or any of their subspecialties—including neurology—or any combination of these as approved by the directors of the training programs in anesthesiology.
• Rotations in critical care and emergency medicine, with at least one month, but no more than two months, devoted to each. Other rotations completing the 12 months of broad education should be relevant to the practice of anesthesiology.

The ABA does not list specific requirements for IONM.

**ABCN**

The American Board of Clinical Neurophysiology (ABCN) grants certification with special competency in IONM. Applicants must successfully complete residency training in neurology, neurosurgery, or psychiatry in an Accreditation Council for Graduate Medical Education (ACGME)–approved training program and must be board-certified in one of those specialties.

Additional requirements include a minimum of 12 months of training and supervised experience in clinical neurophysiology following the completion of a primary residency.

**ABEM**

The American Board of Electrodiagnostic Medicine (ABEM) certifies physicians in electrodiagnostic medicine. Candidates must be a diplomate of the American Board of Psychiatry and Neurology, American Board of Physical Medicine and Rehabilitation, American Osteopathic Board of Neurology & Psychiatry, or American Board of Physical Medicine and Rehabilitation. After residency, physicians must acquire a period of preceptorship of at least six months’ duration. A post-residency course of study in electrodiagnostic medicine must be conducted. During these six months, at least 200 complete diagnostic evaluations must be documented and interpreted.

The ABA does not list additional specific requirements for IONM.
**ABNS**

The American Board of Neurological Surgery (ABNS) offers certification to physicians who fulfill the approved educational training and evaluation process.

Prior to July 1, 2009, the ABNS required candidates for certification to complete at least 36 months of core clinical neurosurgery with progressive responsibilities culminating in 12 months at the most senior level. The entire 36 months must be done in programs accredited by the Residency Review Committees (RRC) of the ACGME. At least 24 months must be obtained in one program.

At least three months must be devoted to clinical neurology as a full time assigned resident in a program accredited by the RRC for neurology. Six months are recommended, but three are required. Up to three months of this training may be acquired during the 12 months of training in fundamental clinical skills.

Candidates applying after July 1, 2009, must complete at least 72 months of training. At least 42 months must be devoted to core clinical neurosurgery with progressive responsibilities culminating in 12 months at the most senior level. The entire 42 months must be done in programs accredited by the RRC. At least 21 months must be obtained in one program.

ABNS does not list specific requirements for IONM.

**ABPN**

The American Board of Psychiatry and Neurology (ABPN) offers certification in neurology, which requires candidates to complete either four years of training in ACGME-accredited neurology residency or a year of ACGME-accredited training in internal medicine and three years of postgraduate, specialized residency training in a neurology program.

The ABPN offers a three-year neurology residency program, which includes a full year of ACGME-accredited training in internal medicine or a full year in an ACGME-accredited program in which a minimum of six months of training must be in internal medicine.

The ABPN also offers a four-year neurology residency program, which includes four years of training in a neurology residency program accredited by the ACGME; and a certification in the subspecialty of clinical neurophysiology in which one year of specialized training in clinical neurophysiology is required.

The ABPN does not list specific requirements for IONM.
AOBA

The American Osteopathic Board of Anesthesiology (AOBA) offers a certification in anesthesiology to qualified physicians. Candidates must:

- Be a graduate of an American Osteopathic Association (AOA)-accredited college of osteopathic medicine.
- Be a member in good standing of the AOA or the Canadian Osteopathic Association for the two years immediately prior to the date of certification.
- Have satisfactorily completed residency training in anesthesiology. If residency training was completed:
  - Prior to July 1, 1986, the physician must have satisfactorily completed a minimum of two years of AOA-approved formal training in anesthesiology after satisfactorily completing an internship of at least one year in a hospital approved for intern training by the AOA
  - After July 1, 1986, the physician must have satisfactorily completed a minimum of three years of an AOA-approved formal training program in anesthesiology after completion of an AOA-approved internship
  - After July 1, 2008, the physician must have satisfactorily completed a minimum of four years of an AOA-approved formal training program in anesthesiology

The AOBA does not list specific requirements for IONM.

AOBNP

The American Osteopathic Board of Neurology & Psychiatry (AOBNP) includes the following requirements for certification applicants in neurology:

- Graduation from an AOA-accredited college of osteopathic medicine
- License to practice in the state or territory where his/her practice is conducted
- Three years of AOA-approved training in neurology, after the required year of internship

The AOBNP does not list specific requirements for IONM.

AOBS

The American Osteopathic Board of Surgery (AOBS) certifies physicians in neurological surgery. Candidates who began training prior to 2008 must complete one year of training in general surgery followed by four years of training in neurological surgery or five years of training in neurological surgery. Candidates who began residency training with the required internship starting in the academic year 2008 must complete six years of neurological surgery.

The AOBS does not publish specific requirements for IONM.
Positions of societies, academies, colleges, and associations

ACGME

The ACGME Program Requirements for Graduate Medical Education in Neurology requires at least 36 months of a neurology residency. Approved residencies in neurology must provide at least 36 months of this education. The program meeting these requirements may be of two types:

• Programs that provide four years of residency education including a broad clinical experience in general internal medicine
• Programs that provide three years of residency education where all the residents will have had an initial first year of graduate education accredited by the ACGME

The ACGME also published Program Requirements for Graduate Medical Education in Neurological Surgery in which it requires at least 72 months for a neurological surgery residency; the first 36 months must include a minimum of three months of structured education in an ACGME-accredited neurology program. Residents should have a maximum of six months of neurological surgery.

The program must also include:

• 42 months of clinical neurological surgery
• Minimum of 21 months of neurological surgery education
• A 12-month period as chief resident on the neurological surgery clinical service

AAN

The American Academy of Neurology (AAN) is an international professional association of neurologists and neuroscience professionals accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians. In a February 2012 report, Principles of Coding for Intraoperative Neurophysiologic Monitoring and Testing, the AAN reported IONM must be furnished by qualified personnel. It cited the beneficial results of monitoring with somatosensory evoked potentials (SSEP) demonstrated by the 1995 multicenter study (Nuwer et al., 1995) that showed fewer neurological deficits with experienced monitoring teams.

In general, the AAN report recommends that the monitoring team strive to optimize recording and interpreting conditions such that:

• A well-trained, experienced technologist, present at the operating site, is recording and monitoring a single surgical case.
• A monitoring clinical neurophysiologist supervises the technologist.

The AAN does not list specific requirements for IONM.
AANEM

The American Association of Neuromuscular & Electrodiagnostic Medicine (AANEM) is a nonprofit membership association dedicated to advancing neuromuscular, musculoskeletal, and electrodiagnostic medicine.

The AANEM published *Electrodiagnostic Laboratory Accreditation Program* but does not list specific requirements for IONM. In February 2012, AANEM endorsed the AAN guideline update on IONM. The update concludes that IONM with SSEPs and transcranial electrical motor evoked potentials is an effective technique to predict increased risks of serious complications from spinal surgeries and some chest surgeries.

ASNM

ASNM published a position paper, *Intraoperative Monitoring Using Somatosensory Evoked Potentials*, in which it states IONM may be divided into two levels of service delivery: professional and technical. Individuals performing or supervising IONM services should have gained appropriate education, training, and experience prior to practicing in a clinical setting.

ASNM also published *Guidelines for Intraoperative Neuromonitoring Using Raw (Analog or Digital Waveforms) and Quantitative Electroencephalography*, in which it cites two levels of clinical services related to performing IONM: 1.) a supervisory/interpretative level; and 2.) a technical level.

Interpretation of IONM data and any recommendations regarding the consequences or intervention are the responsibility of a qualified physician or clinical neurophysiologist, including any doctoral-level degree in a physical science, life science, or clinical allied health profession from an accredited institution, as well as other neuromonitoring modalities, according to ASNM.

The association also published *Credentialing and Competency Policy Statement for Intraoperative Neuromonitoring Staff*, in which it calls for a log of 300 cases over a minimum period of three years and attestations from two surgeons.

AOA/ACONP

The AOA and American College of Osteopathic Neurologists and Psychiatrists (ACONP) together published *Basic Standards for Residency Training in General Neurology*, a report which includes the following requirements:
- A four-year-long residency training program in neurology
- Two months neurology, one month emergency medicine, one month surgery selective (vascular, neurosurgery, orthopedics, etc.), one month elective (as agreed upon with the residency training director), seven months internal medicine—to include mandatory one month cardiology, minimum one month intensive care unit, three months general internal medicine, two months...
elective internal medicine specialties
• Two years of exposure to diagnostic procedures in inpatient as well as outpatient settings
• Twelve months of subspecialty rotations, including EMG, EEG, neuropathology, neuro-pediatrics, neuroradiology and exposure to movement disorders, and neuro-ophthalmology.

The AOA published Basic Standards for Residency Training in Surgery and the Surgical Subspecialties, in which it requires a minimum of 500 major neurological surgery procedures per year.

According to the report, the required length of a neurosurgery residency program is 72 months, which includes an AOA-approved common surgical OGME-1R year. During the first 36 months of education residents must have a minimum of three months of structured education in a neurology program.

Residents must spend a 12-month period performing the duties as chief resident on the neurological surgery clinical service in the sponsoring institution under supervision, and demonstrate advanced-level responsibilities.

By completion of his or her program, each resident must document participation, under supervision, of a minimum of 400 major neurosurgical procedures, 200 of which must be cranial and must represent a well-balanced spectrum of neurological surgery in both adults and children.

Positions of subject matter experts

Marc Nuwer, MD, PhD
Los Angeles

Marc Nuwer, MD, PhD, chief of clinical neurophysiology at the Ronald Reagan UCLA Medical Center in Los Angeles, says most often neurologists perform IONM. However, other specialties are involved, with the second most-common specialty being physical medicine. IONM includes a variety of different techniques, Nuwer says.

The specific technique a physician performs during IONM will dictate the education, training, and experience they require. IONM is divided into about a dozen different techniques, and physicians who know one technique may not be skilled in another, Nuwer adds.

As for the ACGME curriculum, IONM has been incorporated for the identified specialty areas for clinical neurophysiology as one of four training tracks, says Nuwer.
The other three are:
- EEG and epilepsy
- EMG and neuromuscular disorders
- Sleep medicine and sleep testing

“People are expected to know something about each of these, and they must have at least two out of the four in clinical detail,” Nuwer says.

Nuwer, who is also the program director for UCLA’s clinical neurophysiology training program, says trainees usually get through 600 cases of IONM during training for UCLA’s program.

The UCLA program not only wants its trainees to see the common kinds of cases but also the “stuff that comes up from time to time, and the clinical crises that may arise during monitoring,” Nuwer says.

As for how many cases/procedures are necessary to maintain competence on an annual basis combined with outcomes, Nuwer says for IONM this again depends on the practitioner’s specific competency. For example, “if you’re just doing spine [surgery], you’re probably doing just a few cases a month.”

Other procedures utilize like skills and techniques, and these should be considered when developing criteria for this privilege, according to Nuwer. About two-thirds of the skills in IONM procedures are used also in the outpatient arena, he says. With SSEP assessments, for instance, skills such as reading EEGs can be carried over into the operating room.

“It comes back to the notion that there are a dozen different things we do,” Nuwer says of IONM. “Privileging someone in OR monitoring and testing is like privileging someone in surgery: What exactly are you privileging them for?”

_Gloria M. Galloway, MD, FAAN_

_Columbus, Ohio_

Neurologists or physiatrists generally perform IONM, says **Gloria M. Galloway, MD, FAAN**, attending neurologist at Nationwide Children’s Hospital and professor of clinical pediatrics and neurology at The Ohio State University College of Medicine.

Typically, neurologists gain IONM experience through post-residency or fellowship training in clinical neurophysiology. According to Galloway, there is now a track of post-residency training in clinical neurophysiology with training in EEG and IONM.
Galloway took a year of fellowship training in clinical neurophysiology and was involved with cases three to five days per week. As for how many procedures are necessary to maintain competence on an annual basis combined with outcomes, Galloway says she is not aware of an absolute number.

“Often competence will vary depending on the clinical cases and experiences involved, so if one is only involved in scoliosis cases, than that is where one’s competence will be,” she says.

Galloway says IONM involves varied skills depending on the type of case. “Epilepsy surgical monitoring skills are very different than those involved in cases of dorsal rhizotomies or cranial nerve EMG, or scoliosis,” she says. “It very much depends on the particulars of the cases involved and the intensity of physician involvement.”

The field of IONM is very broad, as are the training, experience, and education requirements for IONM surgeries, Galloway says. “There is not one procedure.”

Positions of accreditation bodies

CMS

CMS has no formal position concerning the delineation of privileges for IONM. However, the CMS Conditions of Participation (CoP) define a requirement for a criteria-based privileging process in §482.22(c)(6) stating, “The bylaws must include criteria for determining the privileges to be granted to individual practitioners and a procedure for applying the criteria to individuals requesting privileges.”

§482.12(a)(6) states, “The governing body must assure that the medical staff bylaws describe the privileging process. The process articulated in the bylaws, rules or regulations must include criteria for determining the privileges that may be granted to individual practitioners and a procedure for applying the criteria to individual practitioners that considers:

• Individual character
• Individual competence
• Individual training
• Individual experience
• Individual judgment

The governing body must ensure that the hospital’s bylaws governing medical staff membership or the granting of privileges apply equally to all practitioners in each professional category of practitioners.”
Specific privileges must reflect activities that the majority of practitioners in that category can perform competently and that the hospital can support. Privileges are not granted for tasks, procedures, or activities that are not conducted within the hospital, regardless of the practitioner’s ability to perform them.

Each practitioner must be individually evaluated for requested privileges. It cannot be assumed that every practitioner can perform every task, activity, or privilege specific to a specialty, nor can it be assumed that the practitioner should be automatically granted the full range of privileges. The individual practitioner’s ability to perform each task, activity, or privilege must be individually assessed. CMS also requires that the organization have a process to ensure that practitioners granted privileges are working within the scope of those privileges.

CMS’ CoPs include the need for a periodic appraisal of practitioners appointed to the medical staff/granted medical staff privileges (§482.22[a][1]). In the absence of a state law that establishes a time frame for the periodic appraisal, CMS recommends that an appraisal be conducted at least every 24 months. The purpose of the periodic appraisal is to determine whether clinical privileges or membership should be continued, discontinued, revised, or otherwise changed.

The Joint Commission

The Joint Commission has no formal position concerning the delineation of privileges for IONM. However, in its Comprehensive Accreditation Manual for Hospitals, The Joint Commission states, “The hospital collects information regarding each practitioner’s current license status, training, experience, competence, and ability to perform the requested privilege” (MS.06.01.03).

In the introduction for MS.06.01.03, The Joint Commission states that there must be a reliable and consistent system in place to process applications and verify credentials. The organized medical staff must then review and evaluate the data collected. The resultant privilege recommendations to the governing body are based on the assessment of the data.

The Joint Commission introduces MS.06.01.05 by stating, “The organized medical staff is responsible for planning and implementing a privileging process.” It goes on to state that this process typically includes:

- Developing and approving a procedures list
- Processing the application
- Evaluating applicant-specific information
- Submitting recommendations to the governing body for applicant-specific delineated privileges
- Notifying the applicant, relevant personnel, and, as required by law, external entities of the privileging decision
- Monitoring the use of privileges and quality-of-care issues
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MS.06.01.05 further states, “The decision to grant or deny a privilege(s) and/or to renew an existing privilege(s) is an objective, evidence-based process.”

The EPs for standard MS.06.01.05 include several requirements as follows:

• The need for all licensed independent practitioners who provide care, treatment, and services to have a current license, certification, or registration, as required by law and regulation
• Established criteria as recommended by the organized medical staff and approved by the governing body with specific evaluation of current licensure and/or certification, specific relevant training, evidence of physical ability, professional practice review data from the applicant’s current organization, peer and/or faculty recommendation, and a review of the practitioner’s performance within the hospital (for renewal of privileges)
• Consistent application of criteria
• A clearly defined (documented) procedure for processing clinical privilege requests that is approved by the organized medical staff
• Documentation and confirmation of the applicant’s statement that no health problems exist that would affect his or her ability to perform privileges requested
• A query of the NPDB for initial privileges, renewal of privileges, and when a new privilege is requested
• Written peer recommendations that address the practitioner’s current medical/clinical knowledge, technical and clinical skills, clinical judgment, interpersonal skills, communication skills, and professionalism
• A list of specific challenges or concerns that the organized medical staff must evaluate prior to recommending privileges (MS.06.01.05, EP 9)
• A process to determine whether there is sufficient clinical performance information to make a decision related to privileges
• A decision (action) on the completed application for privileges that occurs within the time period specified in the organization’s medical staff bylaws
• Information regarding any changes to practitioners’ clinical privileges, updated as they occur

The Joint Commission further states, “The organized medical staff reviews and analyzes information regarding each requesting practitioner’s current licensure status, training, experience, current competence, and ability to perform the requested privilege” (MS.06.01.07).

In the EPs for standard MS.06.01.07, The Joint Commission states that the information review and analysis process is clearly defined and that the decision process must be timely. The organization, based on recommendations by the organized medical staff and approval by the governing body, develops criteria that will be considered in the decision to grant, limit, or deny a request for privileges. The criteria must be consistently applied and directly relate to the quality of care, treatment, and services. Ultimately, the governing body or delegated
The governing body has the final authority for granting, renewing, or denying clinical privileges. Privileges may not be granted for a period beyond two years.

Criteria that determine a practitioner’s ability to provide patient care, treatment, and services within the scope of the privilege(s) requested are consistently evaluated.

The Joint Commission further states, “Ongoing professional practice evaluation information is factored into the decision to maintain existing privilege(s), to revise existing privileges, or to revoke an existing privilege prior to or at the time of renewal” (MS.08.01.03).

In the EPs for MS.08.01.03, The Joint Commission says there is a clearly defined process facilitating the evaluation of each practitioner’s professional practice, in which the type of information collected is determined by individual departments and approved by the organized medical staff. Information resulting from the ongoing professional practice evaluation is used to determine whether to continue, limit, or revoke any existing privilege.

**HFAP**

The Healthcare Facilities Accreditation Program (HFAP) has no formal position concerning the delineation of privileges for IONM. The bylaws must include the criteria for determining the privileges to be granted to the individual practitioners and the procedure for applying the criteria to individuals requesting privileges (03.01.09). Privileges are granted based on the medical staff’s review of an individual practitioner’s qualifications and its recommendation regarding that individual practitioner to the governing body.

It is also required that the organization have a process to ensure that practitioners granted privileges are working within the scope of those privileges.

Privileges must be granted within the capabilities of the facility. For example, if an organization is not capable of performing open-heart surgery, no physician should be granted that privilege.

In the explanation for standard 03.01.13 related to membership selection criteria, HFAP states, “Basic criteria listed in the bylaws, or the credentials manual, include the items listed in this standard. (Emphasis is placed on training and competence in the requested privileges.)”

The bylaws also define the mechanisms by which the clinical departments, if applicable, or the medical staff as a whole establish criteria for specific privilege delineation.
Periodic appraisals of the suitability for membership and clinical privileges is required to determine whether the individual practitioner’s clinical privileges should be approved, continued, discontinued, revised, or otherwise changed (03.00.04). The appraisals are to be conducted at least every 24 months.

The medical staff is accountable to the governing body for the quality of medical care provided, and quality assessment and performance improvement (03.02.01) information must be used in the process of evaluating and acting on re-privileging and reappointment requests from members and other credentialed staff.

**DNV**

DNV has no formal position concerning the delineation of privileges for IONM. MS.12 Standard Requirement (SR) #1 states, “The medical staff bylaws shall include criteria for determining the privileges to be granted to individual practitioners and a procedure for applying the criteria to those individuals that request privileges.”

The governing body shall ensure that under no circumstances is medical staff membership or professional privileges in the organization dependent solely upon certification, fellowship, or membership in a specialty body or society.

Regarding the Medical Staff Standards related to Clinical Privileges (MS.12), DNV requires specific provisions within the medical staff bylaws for:
- The consideration of automatic suspension of clinical privileges in the following circumstances: revocation/restriction of licensure; revocation, suspension, or probation of a DEA license; failure to maintain professional liability insurance as specified; and noncompliance with written medical record delinquency/deficiency requirements
- Immediate and automatic suspension of clinical privileges due to the termination or revocation of the practitioner’s Medicare/Medicaid status
- Fair hearing and appeal

The Interpretive Guidelines also state that core privileges for general surgery and surgical subspecialties are acceptable as long as the core is properly defined.

DNV also requires a mechanism (outlined in the bylaws) to ensure that all individuals provide services only within the scope of privileges granted (MS.12, SR.4).

Clinical privileges (and appointments or reappointments) are for a period as defined by state law or, if permitted by state law, not to exceed three years (MS.12, SR.2).

Individual practitioner performance data must be measured, utilized, and evaluated as a part of the decision-making for appointment and reappointment.
Although not specifically stated, this would apply to the individual practitioner’s respective delineation of privilege requests.

**CRC draft criteria**

The following draft criteria are intended to serve solely as a starting point for the development of an institution’s policy regarding IONM.

*Minimum threshold criteria for requesting privileges in IONM*

**Basic education**: MD or DO

**Minimal formal training**: Successful completion of an ACGME-/AOA-accredited residency training program in a medical specialty such as neurology, neurosurgery, anesthesiology, physiatry, or family medicine. In addition, applicants must have successfully completed an accredited training program in clinical neurophysiology or be able to demonstrate equivalent practice experience.

**Required current experience**: Applicants must be able to demonstrate that they have successfully monitored and interpreted at least [n] IONM cases in the past [n] months.

**Note (if applicable)**: Clinical physiologists who have completed a PhD degree should be able to demonstrate the following:

- At least three years of experience in neurophysiologic monitoring
- Primary responsibility for having monitored and interpreted a minimum of 300 surgical procedures in person
- Two letters from surgeons attesting to the case experience and time component

**References**

If the applicant is recently trained, a letter of reference should come from the director of the applicant’s training program. Alternatively, a letter of reference may come from the applicable department chair and/or clinical service chief at the facility where the applicant most recently practiced.

**Reappointment**

Reappointment should be based on unbiased, objective results of care according to a hospital’s quality assurance mechanisms. Applicants must be able to demonstrate that they have maintained competence by documenting that they have successfully monitored and interpreted at least [n] IONM cases annually during the reappointment cycle. In addition, continuing education related to IONM should be required.
For more information

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**American Board of Anesthesiology**
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American Osteopathic Board of Anesthesiology
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American Osteopathic Board of Surgery
4764 Fishburg Road, Suite F
Huber Heights, OH 45424
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Website: www.aobs.org

American Society of Neurophysiological Monitoring
310 West Lake Street, Suite 111
Elmhurst, IL 60126
Telephone: 630-832-1300
Website: www.asnm.org

Centers for Medicare & Medicaid Services
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Baltimore, MD 21244
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Intraoperative neurophysiological monitoring

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<td>Texas Back Institute</td>
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<td>Phoenix, Ariz.</td>
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<td>Sally J. Pelletier, CPCS, CPMSM</td>
<td>Advisory Consultant, Chief Credentialing Officer</td>
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<td>The Greeley Company</td>
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<td>Richard A. Sheff, MD</td>
<td>Chair and Executive Director</td>
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